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On *Caligus triangularis* n. sp., a Copepod parasitic  
on *Halichoeres poecilopterus* (T. & S.)\*

With 1 Text-figure

Sueo M. SHIINO

Faculty of Fisheries, Mie Prefectural University

(Communicated by Y. OKADA)

The new Caligid Copepod dealt with in the present paper was found on the outside surface of *Halichoeres poecilopterus* (T. & S.) taken at Hamajima, Mie Prefecture.

*Caligus triangularis* n. sp.

15 females and 11 males preserved in Mie Prefectural University.

*Holotype*: Female (Fig. 1, A–G). Slender, 3.11mm × 1.50mm excluding caudal rami, egg tubes 2.25mm long; transparent, colorless, with rather sparse spots of brown pigment, eye brown, egg tubes whitish.

Carapace more than half the entire length, a trifle narrower than long, and widest at posterior 1/3 of its length. Lunules small, widely apart. Transverse groove about the centre of carapace, slightly curved forwards. Median lobe projecting for half of its length beyond lateral lobes; its margin produced on the median into a short, narrow waist and inclined diagonally forwards on either side of the latter to reach angular lateral corner. Fourth thoracic and genital segments fused together forming a roughly triangular piece, which broadens backwards and is 7/10 as long and 3/5 as wide as carapace. Fourth segment, posterior limit of which is indicated by shallow depressions on the sides, occupies anterior 1/5 of the triangle; its width narrows somewhat both

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in front and in the rear of limb-bases. Lateral margins of genital region converge more strongly from  $1/3$  of segment length forwards, forming an obtuse angle at this point on either side. Posterior margin nearly straight and, close to each lateral end, with 2 small ventral papillae, arranged side by side, the external bearing a plumose spinule, and the internal, 2 such. Abdomen oblong, unsegmented and equal to  $1/3$  of length and width of preceding segment, from which it is distinct.

Second antennae with well-curved claws. Second maxillipeds with fusiform palm and slender finger which reaches the palm center. Branches of sternal furca project straight backwards from squarish base and attenuate to the apices, interposing a trapezoid sinus. First legs with 4 terminal spines; innermost of these about as long as others, sharp, and with a few bordering hairs on one side close to the base; others subequal in lengths, with tripartite apices, except the outermost, which is simple. Fourth legs feeble, 3-jointed, with 3 and 1 spines on apical and succeeding joints respectively; all spines doubly edged with narrow rims and having at the base of each an oval, pectinate lamina. Caudal rami relatively large, oblong, with 3 spines.

*Allotype*: Male (Fig. 1, H-K). Shorter than female,  $2.33\text{mm} \times 1.25\text{mm}$  exclusive of caudal rami. Carapace and 4th thoracic segment resemble those of female, but the latter has a distinct hind border. Genital segment ovate,  $1/3$  as long as carapace, as wide as its own length. It bears a short, conical ventral process, tipped by 2 or 3 short plumose spinules, on each side of posterior margin, and 3 further spinules on lateral margins a little in front. Abdomen about  $2/3$  as long and half as wide as preceding segment, and composed of 2 segments, of which the 1st is very short, transversely linear, while the 2nd is much longer and squarish.

Apical joint of 2nd antennae short, acuminate, and with a triangular protuberance; middle joint stouter than corresponding one of female and raised in a broad longitudinal ridge, whose terminal portion is marked off from the rest as an oblong bulge by a narrow oblique furrow. Palm of 2nd maxillipeds about the same as that of female in size and shape, but carrying, on inner border close to the base, a prominent process which is subdivided into 2 or 3 sharp denticles; finger stouter than in female, reaching that process. Otherwise as in that sex.

*Remarks*: In some of the females the obtuse angles on the sides of the genital segment are acuter and more pronounced than in those figured here, the margins anterior to the angles converging more rapidly forwards, so that the segment becomes a pentagon. Such a shape, be it triangle or pentagon, is rather unique.

Setting aside the angular appearance, outline of the named segment more or less resembles that found in *C. dentatus* Gadd<sup>3)</sup>, *praetextus* Bere<sup>1)</sup>, *phipsoni* Wilson<sup>6)</sup>, *lichiae* Brian<sup>2)</sup>, and *isonyx* Stp. & Lütke<sup>5)</sup>. The

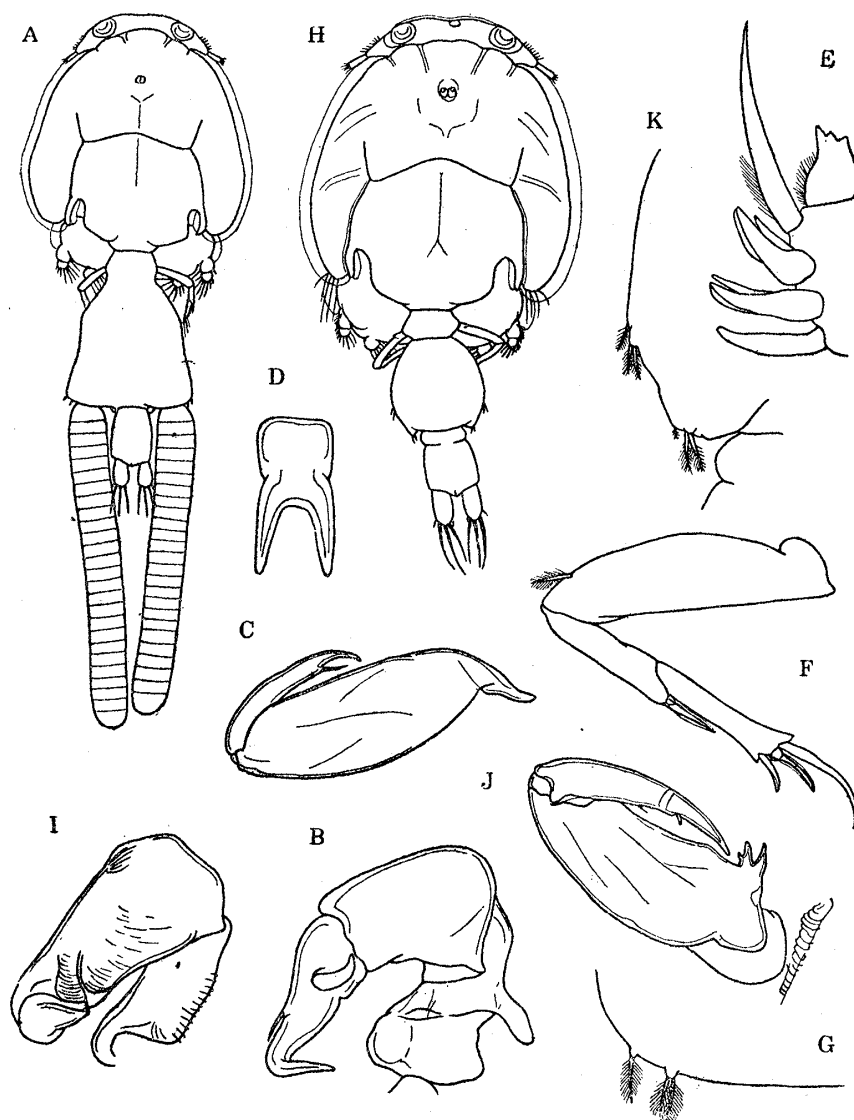


Fig. 1. *Caligus triangularis* n. sp. A-G, female; A, dorsal view; B, 2nd antenna; C, 2nd maxilliped; D, sternal furca; E, tip of 1st leg; F, 4th leg; G, postero-lateral angle of genital segment, ventral view; H-K, male; H, dorsal view; I, 2nd antenna; J, 2nd maxilliped; K, postero-lateral angle of genital segment, ventral view. A  $\times 16.8$ , B, I  $\times 153$ , C, D, F, G, J, K  $\times 108$ , E  $\times 438$ , H  $\times 24$ .

new species appears closer to *dentatus* than to others not only in this point, but also in the configuration of the posterior segments of the male. But differences may be found in that the 1st antennae of the male of *dentatus* have bifid tips and the palm of the 2nd maxillipeds

bears more numerous denticles than in the new species; moreover, the genital segment of the female has gracefully rounded sides. From the other species, the new one is distinguished by the constitution of the 4th thoracic legs. In *praetextus* and *phipsoni* these possess a spine on outer border of the apical joint, and in *lichiae* as well as in *isonyx* these are 4-jointed.

The new species was found upon the host together with *C. brevis* Shiino<sup>4)</sup>, which has recently been described by myself. In distinguishing the two, the shape of the genital segment is significant. A triangular shape of this segment is found in *C. branchialis* Malm, described and figured by Steenstrup & Lütken<sup>5)</sup>. This species, lacking lunules, is not a *Caligus*, but belongs to *Lepeophtheirus*.

#### REFERENCES

1. Bere, A., 1936. Amer. Midland Nat., **17**, 577-625.
2. Brian, A., 1906. Copepodi parassiti dei Pesci d'Italia, 1-187, pls. 1-21.
3. Gadd, P., 1906. Ark. f. Zool., **3**, no. 15, 1-9.
4. Shiino, S.M., 1954. Bull. Jap. Soc. Sci. Fish., **20**, 178-183.
5. Steenstrup, J.J.S. & Lütken, C.F., 1861. Dansk. Vidensk. Selsk. Skr. (5), Naturh.-math., **5**, 343-432, pls. 1-15.
6. Wilson, C.B., 1912. Proc. U. S. Nat. Mus., **42**, 234-243, pls. 30-34.